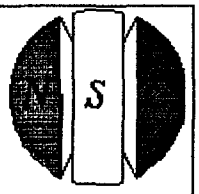

Confederation 1994

Load Test Plan

Enclosure 3 To

Confederation of Models Verification, Validation and Accreditation

Prepared by
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The National Simulation Center
CONQUERING FRONTIERS

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13. ABSTRACT *(Maximum 200 words)*

The 1994 Confederation of Models is a set of DOD training simulations from each branch of the service which utilize the Aggregate Level Simulation Protocol (ALSP) to interact. The Confederation Verification , Validation, and Accreditation Master Plan (CVVAMP) consists of a several test plans and reports which include the: (a) Confederation of Models Verification , Validation, and Accreditation Master Plan (b) Technical Test Plan (c) Integrated Test Plan (d) Load Test Plan (e) Verification Test Plan.

Related reports include the: (a) Accreditation Report for the Confederation of Models in General Headquarters 94 (b) Recommendations on the Use of the Seven Member Confederation of Models.

The Load Test Plan outlines management of the load test, rank ordering effects, typical expected loads, maximum expected loads, ultimate notional confederation load experiment, and performance targets.

14. SUBJECT TERMS

Confederation of Models, ALSP, RESA, Military Training Models, AWSIM, MTWS, CBS, JECEWSI, TACSIM, CSSTSS, Simulation

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CONFEDERATION LOAD TEST PLAN

Management – The execution of the Confederation Load Test will be directed by the officer staffing the ECF Control Desk (Capt Adams). All instructions regarding model operations will be issued by that officer. Mr. Emert will be responsible for tracking and directing the progress of the Test Plan. He will be located in the ECF using the Control Desk to initiate the steps of the plan and AOC reports and software tools to determine the completion of the steps. The Operational Test Director (LTC Taylor) will coordinate all AOC activities. The ECF Control Desk will inform him of the beginning of each step of the test plan and he will in turn direct the appropriate AOC personnel. The Operational Test Director is responsible for reporting the status of his assigned tasks back to the ECF Control Desk. The Technical Test Director (Dr. Weatherly) is the final authority on all Load Test questions.

Part I – Rank Ordering of Effects

Goal Achieved: Part I will enable us to identify, within CBS, the load parameters that have the greatest effect on game ratio. The methodology should enable us to rank order each parameter.

The game ratio should be set to run as fast as possible (6:1). Though it is expected, it is not required that the confederation achieves a ratio of at least 1:1.

ALSP logging (Actor-ACM, ABE) should be OFF for the entire length of part I.

The CIF files from part I will be kept and used in prepararion for part II.

	Time
1) Prep time / RESA, AWSIM, launch aircraft - ADA units on hold - 7,000 units	1 hour
2) Run with steady activity for data collection	15 minutes
3) Turn ON ADA units	10 minutes
4) Take a confederation save	5 minutes
5) Run with steady activity for data collection	15 minutes
6) Build to 200 Artillery missions	30 minutes
7) Run with steady activity for data collection	15 minutes
8) Restore to save (taken at step 4)	10 minutes
9) Build to 60 HELO missions	30 minutes
10) Run with steady activity for data collection	15 minutes
11) Restore to save (taken at step 4)	10 minutes
12) Build to 50 Convoys	1 hour
13) Run with steady activity for data collection	15 minutes
14) Restore to save (taken at step 4)	10 minutes
15) Build to 250 Infiltrations / 25 COAST missions	1 hour
16) Run with steady activity for data collection	30 minutes
17) Restore to save (taken at step 4)	10 minutes
18) Build to 100 Combat Sets	1-2 hours
19) Run with steady activity for data collection	15 minutes
20) Periods of downtime (eg. crashes) / Troubleshooting	2 hours

Total Time Part I: 10-11 hours

When each of the primary steps are completed (1, 3, 6, 9, 12, 15 and 18) the exercise control desk should be notified so that all test participants are aware of this, and can take the necessary steps for data collection, logging of events, etc. The exercise control desk will enter any significant activity (eg. model crashes) that occurs within the confederation into an on-line log.

Verification of the totals in steps 6, 9, 12, 15,, and 18 will be from:
- CBS UXREF files and workstation calculations (SHOWDB)

Part II - Typical Expected Loads (TEL) ==> See Appendix A

Goal Achieved: Part II must verify that the confederation will be able to maintain a 1:1 game ratio at typical expected loads for '94 exercises. This is the primary goal of the load test.

The game ratio should be set to run as fast as possible (6:1). Any ratio of 1:1 or better will be considered successful.

ALSP logging will be toggled ON/OFF during the collection period (step 6, part II) to see the effect that logging has on game ratio.

While running at TEL, an additional confederation save will be taken when it appears that the peak load (objects and interactions) has been reached. This confederation save will be used as the starting point for part III.

	Time
1) Restore from part I, step 4 save	10 minutes
2) Build to 100% of TEL	30 minutes

- by stuffing CIF files, generated from part I, into CBS
- in RESA and AWSIM (in parallel with CBS) , launch aircraft and produce interactions **approximating** the typical expected load for the '94 confederation

Verification of this total will be from:
- CBS UXREF files and workstation calculations (SHOWDB)
- Object counts seen at the ALSP Actor Monitor Screens

3) Take a confederation save at 50% of TEL	5 minutes
4) Take a confederation save at 75% of TEL	5 minutes
5) Take a confederation save at 100% of TEL	5 minutes
6) Run at 100% of TEL	1 hour 30 minutes
7) Take a confederation save at peak load of TEL	5 minutes
8) Periods of downtime / Troubleshooting	2 hours
Total Time Part II:	4 hours 30 minutes

Contingency plans for part II:

A) If unable to maintain a 1:1 game ratio at TEL:
   1) Drop back to 50% of TEL
   2) Run at 50% TEL until 1:1 is achieved

B) If successful at 50% TEL:
   1) Build to 75% of TEL
   2) Run at 75% TEL until 1:1 is achieved

C) If successful at 75% TEL:
   1) Build to 100% of TEL
   2) Run at 100% TEL until 1:1 is achieved

Part III - Maximum Expected Loads (MEL) ==> See Appendix B

Goal Achieved: Part III will test the confederation's ability to maintain a 1:1 game ratio at maximum expected loads for '94 exercises.

Part III will not be started until part II is successfully completed. The game ratio should be set to run as fast as possible (6:1). Any ratio at 1:1 or better will be considered successful.

The gradual build-up of parts III and IV will better enable us to identify the approximate point at which the '94 confederation may fail to run at 1:1

While running at MEL, an additional confederation save will be taken when it appears that the peak load (objects and interactions) has been reached. This confederation save will be used as the starting point for part IV.

Verification of the totals below (steps 3,6,9,12) will be from:
- CBS UXREF files and workstation calculations (SHOWDB)
- Object counts seen at the ALSP Actor Monitor Screens

	Time
1) Restore from save (TEL), Reload CBS database to reach 11,000 units, perform necessary splitting of ADA units	30 minutes
2) Take a confederation save	5 minutes
3) Add 25% to TEL	30 minutes
4) Take a confederation save	5 minutes
5) Run at 25% + TEL	20 minutes
6) Add 50% to TEL	30 minutes
7) Take a confederation save	5 minutes
8) Run at 50% + TEL	20 minutes
9) Add 75% to TEL	30 minutes
10) Take a confederation save	5 minutes
11) Run at 75% + TEL	20 minutes
12) Add 100% to TEL = MEL	30 minutes
13) Take a confederation save	5 minutes
14) Run at MEL	1 hour
15) Take a confederation save at peak load of MEL	5 minutes
16) Periods of downtime / Troubleshooting	2 hours
Total Time Part III:	7 hours

Contingency plans for part III:

A) If in part II, a 2:1 game ratio or better was achieved at TEL:
- if the ratio is still better than 1:1 at steps 5 and 8, skip these steps while proceeding to step 9
- then increase the data collection period to 30 minutes (step 11)

B) If contingency A is used and the game ratio is still 1:1 or better, proceed with the remaining steps until MEL is reached

Else

C) If contingency A is used and the game ratio is NOT 1:1 or better, drop back to the step 4 save and run at this level until 1:1 is achieved. Then proceed in 25% increments.

Part IV - Ultimate Notional Confederation Load Experiment (UNCLE) ==> See Appendix C

Goal Achieved: Part IV will give us a benchmark for future confederations at ultimate notional confederation loads. It is only an experiment.

We do not expect that the confederation will be able to achieve a 1:1 ratio at these loads. No specific ratio goals are required to achieve confederation certification from part IV.

	Time
1) Restore from save (MEL), Reload CBS database to reach 15,000 units, perform necessary splitting of ADA units	40 minutes
2) Add 25% to MEL	30 minutes
3) Take a confederation save	10 minutes
4) Run at 25% + MEL	20 minutes
5) Add 50% to MEL	30 minutes
6) Take a confederation save	10 minutes
7) Run at 50% + MEL	20 minutes
8) Add 75% to MEL	30 minutes
9) Take a confederation save	10 minutes
10) Run at 75% + MEL	20 minutes
11) Add 100% to MEL = UNCLE	30 minutes
12) Take a confederation save	10 minutes
13) Run at UNCLE	1 hour
14) Take a confederation save	10 minutes
15) Periods of downtime / Troubleshooting	2 hours
Total Time Part IV:	7 hours 30 minutes

Total Time all 4 Parts: 29-30 hours

APPENDIX A

Performance Targets

CBS Confederation-related Performance Targets

Parameter	TEL	50% of TEL	75% of TEL
Units	7,000	3,500	5,250
SHORAD Units	300	150	225
Ghosted Air Msns	400	200	300

CBS Model-specific Performance Targets

Parameter	TEL	50% of TEL	75% of TEL
Arty Missions	200	100	150
HELO Missions	60	30	45
Convoys	50	25	37
Infiltrations	250	125	187
Aircraft	300	150	225
Combat Sets	50	25	37
COAST Missions	25	12	19

AWSIM Perfromance Targets

Parameter	TEL	50% of TEL	75% of TEL
Air Missions	300	150	225
HIMAD/ALLRAD	90	45	67

RESA Performance Targets

Parameter	TEL	50% of TEL	75% of TEL
Ships	325	162	244
Boats	150	75	112
Aircraft Flights	100	50	75
CMs / TBMs	30	15	22
Bases	50	25	37
Helicopters	10	5	7
Submarines	100	50	75
Torpedoes	10	5	7
Radars (active)	400	200	300
Sonobuoy Fields	10	5	7
Total RESA Units	700	350	525
ALSP ghosted units	300	150	225
Total units in DB	1,000	500	750

APPENDIX B

Performance Targets

CBS Confederation-related Performance Targets

Parameter	MEL	TEL + 25%	TEL + 50%	TEL + 75%
Units	11,000	8,000	9,000	10,000
SHORAD Units	450	337	375	412
Ghosted Air Msns	500	425	450	475

CBS Model-specific Performance Targets

Parameter	MEL	TEL + 25%	TEL + 50%	TEL + 75%
Arty Missions	400	250	300	350
HELO Missions	120	75	90	105
Convoys	100	62	75	87
Infiltrations	500	312	375	437
Aircraft	500	350	400	450
Combat Sets	100	62	75	87
COAST Missions	50	31	37	44

AWSIM Perfromance Targets

Parameter	MEL	TEL + 25%	TEL + 50%	TEL + 75%
Air Missions	500	350	400	450
HIMAD/ALLRAD	110	95	100	105

RESA Performance Targets

Parameter	MEL	TEL + 25%	TEL + 50%	TEL + 75%
Ships	325	325	325	325
Boats	250	175	200	225
Aircraft Flights	175	119	138	156
CMs / TBMs	50	35	40	45
Bases	50	50	50	50
Helicopters	15	11	12	14
Submarines	100	100	100	100
Torpedoes	15	11	12	14
Radars (active)	650	462	525	587
Sonobuoy Fields	20	12	15	17
Total RESA Units	950	762	825	887
ALSP ghosted units	500	350	400	450
Total units in DB	1,450	1,112	1,225	1,337

APPENDIX C

Performance Targets

CBS Confederation-related Performance Targets

Parameter	UNCLE	MEL + 25%	MEL + 50%	MEL + 75%
Units	15,000	12,000	13,000	14,000
SHORAD Units	600	487	525	562
Ghosted Air Msns	700	550	600	650

CBS Model-specific Performance Targets

Parameter	UNCLE	MEL + 25%	MEL + 50%	MEL + 75%
Arty Missions	600	450	500	550
HELO Missions	180	135	150	165
Convoys	150	112	125	137
Infiltrations	800	575	650	725
Aircraft	700	550	600	650
Combat Sets	150	112	125	137
COAST Missions	75	56	62	69

AWSIM Perfromance Targets

Parameter	UNCLE	MEL + 25%	MEL + 50%	MEL + 75%
Air Missions	700	550	600	650
HIMAD/ALLRAD	130	115	120	125

RESA Performance Targets

Parameter	UNCLE	MEL + 25%	MEL + 50%	MEL + 75%
Ships	325	325	325	325
Boats	450	300	350	400
Aircraft Flights	300	206	237	269
CMs / TBMs	80	57	65	72
Bases	50	50	50	50
Helicopters	20	16	17	19
Submarines	100	100	100	100
Torpedoes	20	16	17	19
Radars (active)	1,200	787	925	1,062
Sonobuoy Fields	40	25	30	35
Total RESA Units	1,300	1,037	1,125	1,212
ALSP ghosted units	700	550	600	650
Total units in DB	2,000	1,587	1,725	1,862